Workplace Safety

The Federal Occupational Safety & Health Administration (OSHA) recognizes that workplace safety programs are a key element in preventing injuries. Many printers have some management procedures that address employee health protection and injury prevention. Although printers may find it time consuming to develop and implement a Safety & Health (S&H) Program, OSHA has consistently shown that shops with good S&H Programs are more productive, have higher employee morale, and low worker compensation costs.

In this chapter, you will be provided with the basics on how to develop and implement a S&H Program. You will also have an opportunity to find out what you can do to prevent the ten most common OSHA violations in the printing and publishing industry. Each violation will be described and practical solutions provided to help you maintain a safe shop.

Printers should also be aware that OSHA regulations may not apply to all their printing operations. If there is no specific OSHA standard for the hazard, OSHA still has the authority to enforce printers to correct recognized hazards in their shops. The Occupational Safety & Health Act of 1970 has a "General Duty Clause", which provides that:

> "Each employer ... **shall** furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

This means you must make a sincere effort to review, and then correct, possible and known hazards in your shop, regardless of whether an OSHA standard applies. Read the following example to see how Indiana OSHA (IOSHA) could use an employee complaint to inspect a print shop, resulting in a violation of the General Duty Clause.

General Duty Example

A speciality book printer has 10 employees working in the bindery department. Over the past two years, four employees have suffered from injuries in the wrists and shoulders. An employee complaint is filed, but management makes little effort to address the employee's concerns. A complaint is then filed with IOSHA. IOSHA visits the shop, reviews the OSHA 200 Logs (summary logs for workplace recording injuries and illnesses) and inspects the bindery operation. IOSHA concludes that the frequency of injuries are excessive compared to the number of department employees. The printer is cited for violating the General Duty Clause because employees are required to perform excessive lifting, twisting and repetitive activities that could be avoided. The printer must pay a penalty and install ergonomic workstations to prevent future repetitive stress injuries.

Indiana OSHA (IOSHA) of the Indiana Department of Labor enforces federal OSHA's workplace safety regulations. There are also fire safety requirements enforced by the Indiana Department of Fire & Building Services (DFBS). (See the next chapter for more information on fire safety.) This chapter provides you with the basic workplace safety requirements. Each print shop is unique and additional requirements may apply.

How Do I Develop a Safety & Health Program?

Printers should endorse and actively support health protection and injury prevention in their shops. A written plan can help.

Midsize and large printers should have a formal S&H Program because of the numerous OSHA requirements that apply to larger shops. But even small shops should have a basic S&H Program in place. S&H Programs should include the following aspects:

- **Management Leadership and Employee Participation**
- **Hazard Identification, Prevention and Corrective Action**
- **Accident Investigation**
- **Emergency Response**
- **Employee Training and Recordkeeping**

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A written plan allows for a more comprehensive look at your shop and how you can improve safety. Using the key program aspects above, you can prepare a written S&H Plan that can be used for reference and employee training. When the S&H Plan is complete, its implementation will take time. You may need to change work practices and conduct employee training.

Start with improving safety awareness first and then incrementally change work practices. Employee involvement is crucial

for success. Involve them in implementing the changes. Continued management commitment and visible support must also be followed by enforcement of new procedures. It may be a difficult task, but well worth it in the long run.

Visit the OSHA website (www.osha.gov) to get more information on Voluntary S&H Programs. OSHA provides an easy to read policy document on how to set up a program on their Library page.

The Ten Most Common OSHA Violations Found in a Print Shop

There are over 1,000 pages of OSHA regulations enforced by IOSHA – many of those regulations apply to printers.

These regulations can be divided into certain major rules. The most commonly known rules include Hazard Communication (HazCom); Lockout/Tagout; Electrical, Fire Protection and Personal Protection Equipment (PPE). Naturally, these rules consist of numerous requirements that make up the most frequent violations found in print shops. Printers are required to comply with these requirements or face significant penalties for noncompliance.

=IOSHA=
SAFETY AND HEALTH
PROTECTION ON THE JOB

Here are the most common ten OSHA violations.

#1	**Inadequate or lack of a Hazard Communication Program (1910.1200).**
#2	**Inadequate or lack of a Lockout/Tagout Program (1910.147).**
#3	**Inadequate or lack of machine guards exposing points of operation or rotating parts. (1910.212)**
#4	**Inadequate or lack of guards on power transmission equipment exposing belts, gears, flywheels, etc. (1910.219)**
#5	**Inappropriate or the lack of Personal Protective Equipment (1910.132).**
#6	**Improper storage of flammable/combustible liquids (1910.106).**
#7	**No annual maintenance check of fire extinguishers. (1910.157)**
#8	**Blocked or inadequate fire exits. (1910.35 - 1910.38).**
#9	**Uncovered, live electrical components. Combustible storage within three feet of electrical panels. (1910.301 - 1910.306)**
#10	**Improper or lack of electrical grounds for metal-enclosed equipment (1910.304).**

1 - Hazard Communication

What You Must Do

- Prepare a written HazCom Plan.
- Label all containers reservoirs and tanks with the product name, primary hazards (flammable, corrosive, etc.) and the target organs (eyes, skin, lungs, etc.). *Exception: containers used by one person and emptied at least daily, consumer products, supplier containers with the same information.*
- Keep Material Safety Data Sheets (MSDSs) for all chemicals in your shop. Even if you stop using the product, you must keep the MSDS for 30 years.
- Keep a Chemical Product List (a list of MSDSs on file) with the written HazCom Plan.
- Train your employees. Required subjects: employee rights; labels; how to read a MSDS; basic chemical hazards; basic emergency response, and proper work procedures (including nonroutine tasks). Document the training.

2 - Lockout/Tagout

What You Must Do

- Prepare a written Lockout/Tagout Plan. You can find a boilerplate plan at the OSHA website, click on the Regulation button and look for 1910.147 – The Control of Hazardous Energy (Lockout/Tagout), Appendix A. Call PII for assistance.
- Compile a table of all equipment subject to lockout. You do not have to include plug & cord equipment that remains under the control of the person performing the service. Make sure you identify in the table the specific lockout source (e.g., Panel RH-1, Breaker 33). If you cannot lock or tag out in one step, you must write a specific procedure for equipment like a press or binding line. *(Don't forget to include building service equipment (e.g., air handling equipment, furnaces, humidifiers, water heaters).*
- Provide locks and tags to authorized employees.
- Employees authorized to perform lockout must be trained in the procedures specific to the equipment for which they are responsible. Employees not authorized (also known as affected employees) must still be trained in how the locks/tags are used and not to attempt to restart locked/tagged equipment.
- On an annual basis review and certify the lockout procedures in the Plan. Review the procedures with each authorized employee. Document this effort.

3 - Machine Guards

What You Must Do

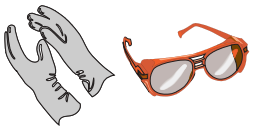
- Guard all ingoing nip points, slitters, guillotine cutters, rotating gears, and any other point of operation where an employee can get caught or cut. Don't forget to guard machine shop tools, table saws, drill presses, lathes, etc.
- The machine guard rule applies to all equipment, regardless of age. There is no grandfather clause for old or used equipment without proper guards.
- Abrasive wheel grinders must have wheel guards and work rests. The work rests must be within 1/8 inch of the wheel, and unguarded wheel exposure must not exceed 90°.

4 - Power Transmission

What You Must Do

- Guard all rotating gears, pulleys, belt/chain drives and drive shafts below seven feet. It is strongly recommended that power transmission equipment be guarded to a height when no employee can reach it.
- This rule applies to all equipment, regardless of age. Again, there is no grandfather clause for old or used equipment without proper guards.

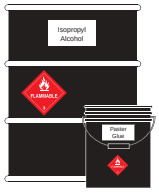
5 - Personal Protective Equipment (PPE)



What You Must Do

- Conduct a PPE Hazard Assessment for each department. Determine the need for PPE (respirators, hearing protection, footwear, gloves, aprons, eye protection) according to job task. Document and sign the Hazard Assessment.
- Provide the PPE. Conduct and document employee training in PPE use and care.
- Ensure that employees wear and take care of PPE. As the employer, you are responsible for the proper care and use of all PPE worn by employees, including PPE (e.g., prescription safety glasses, shoes, respirators, etc.) brought in your shop by employees for their own comfort.
- When operations change and new PPE is required, then redo the Hazard Assessment and retrain employees.

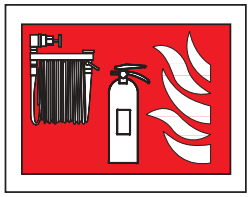
6 - Flammable & Combustible Liquids



What You Must Do

- Many film cleaners, inks, press cleaning solvents and some adhesives and coatings are considered flammable or combustible. Always use approved, closable containers for their storage. Don't use coffee cans, wax paper cups or ice cream containers!
- Store welding gases, inks and solvents away from ignition sources, such as electrical panels, and high voltage equipment.
- Ensure that each container is properly labeled per the HazCom Standard.
- If the liquid has a flash point of 100°F or less, it must be properly grounded. Check with your local Fire Marshal on how to do this.

7 - Fire Extinguishers



What You Must Do

- Install fire extinguishers within 25 feet of flammable/combustible storage areas and 75 feet for other nonproduction areas.
- Ensure that fire extinguishers are certified usable and tagged every 12 months. *(This is generally performed by fire equipment supplier.)*
- Don't block access to fire extinguishers, fire hoses, and alarms. Conduct monthly visual inspections. It is recommended that you provide a three foot buffer area around them.
- Employees who use fire extinguishers must be trained annually. Keep training records.

8 - Means of Egress

What You Must Do

- Don't lock exit doors at anytime.
- Doors that may be mistakened for an exit must be identified as "Not an Exit" or the name of the room.
- Keep aisles leading to exit doors clear and at least 28 in. wide.
- Ensure that exit signs and emergency lights are working. Perform periodic building surveys to test lights and signs.

9 - Electrical System Design

What You Must Do

- Make sure all live electrical components in electrical panels are covered. Use knockout covers, breaker blanks, and metal inserts. Do not use tape, plastic or cardboard.
- Keep electrical panels clear with a three foot buffer zone. For over-600 volt panels, use four feet.

10 - Electrical Wiring & Equipment

What You Must Do

- Ensure that all power cords are insulated with no bare wires. Look at plugs where the power cord has pulled from the plug and wires show. Repair or replace as needed.
- Don't use electrical tape to repair torn wires; it is not considered a permanent fix. Shorten or replace the wire.
- Ensure that equipment with metal enclosures are properly grounded. (This includes consumer fans, coffee machines and portable heaters used in your shop.)
- Ensure that all portable lamps, vending machines and refrigerators are also grounded.
- Ensure that lamp fixtures below eight feet do not have exposed electrical components.
- Identify and mark equipment disconnects, panels and breakers as to their purpose.
- Replace broken or missing outlet faceplates.

Other Common Violations - General

What You Must Do

- Use safety glasses when cleaning with compressed air. Reduce the pressure to 30 psi or less. Also use nozzle tips that prevent back pressure buildup if the nozzle clogs.
- Ensure that all storage mezzanines have top and mid rails and toeboards. They must also be posted with a floor loading sign (e.g., 150 lbs/ft^2 maximum load).
- Keep the OSHA 300 log current within six days of the last recordable injury. Post it during the months February, March and April. Keep the logs for at least five years. The OSHA 300 log is not required for print shops with 10 or fewer employees.

Other Common Violations - Noise

What You Must Do

- ☑ Document annual hearing tests offered to employees exposed to the noise levels in your shop (or a particular shop department) exceeding 85 dB (on the A scale) averaged over an 8-hour period or an equivalent 50% dose. *(Shop noise levels should be determined by a qualified technician with calibrated noise measuring equipment.)*
- ☑ Install engineering controls or provide, and ensure proper use of, two types of hearing protection if the noise levels exceed 90 dB average over an 8-hour period. The engineering controls or hearing protection must reduce the employee's exposure to noise below the 90 dB threshold.
- ☑ Conduct and document annual hearing conservation training for employees exposed to noise in excess of the 85 dB threshold.
- ☑ Post the warning signs and the OSHA noise rule in the area where hearing protection is required.

Emergency Action and Fire Prevention Plans

You are required to have a written Emergency Action Plan and Fire Prevention Plan.

As a shop owner or manager, you are required to prepare for emergencies. This entails a thorough review of your operations and development of basic emergency response procedures. These procedures are outlined in the Emergency Action and Fire Prevention Plans. For shops with less than 10 employees, the plans/procedures can be conveyed to employees verbally.

The Emergency Action Plan is a set of procedures to safely shut down operations, evacuate employees and handle medical emergencies. The Fire Prevention Plan consists of procedures to minimize fire safety hazards and respond to a fire. See page 66 for more information on these plans.

The Benefits of Self-Inspections

Perform a monthly or quarterly self-inspection. It will make hazard identification and corrective action easier when you see an inspector.

It takes time to get started, but once the S&H Program is in place, you will find that it is much easier to maintain it. By conducting periodic self-inspections, you will be able to identify and correct problems before they cause an accident or become a violation. To help you, see page 87 for a self-inspection checklist you can use in your shop.